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ABSTRACT

Asserting that 13 million U.S. children live in households with limited or uncertain access to sufficient food, this report highlights recent findings showing the adverse consequences of hunger and food insecurity for children. The findings are grouped into three broad areas: health consequences, psychosocial and behavioral impacts, and learning and academic outcomes. A section on the relationship between food insecurity and obesity is also included. Among the findings it is noted that such children are sick more often, much more likely to have ear infections, have higher rates of iron deficiency anemia, and are hospitalized more frequently than children in other households. As a result, they miss more days of school and are less prepared to learn when they are able to attend. They are also more likely to have poorer mental health, be withdrawn or socially disruptive, and suffer greater rates of behavioral disorders. (Contains 21 references.) (EV)

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The Consequences of Hunger and Food Insecurity for Children

Evidence from Recent Scientific Studies

Center on Hunger and Poverty
Heller School for Social Policy and Management
Brandeis University

June 2002

An analysis prepared for
ConAgra Foods' Feeding Children Better Foundation
Sponsor of Kids Cafes in communities across the nation

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The Consequences of Hunger and Food Insecurity for Children

Evidence from Recent Scientific Studies

Foreword

Bruce Rohde, President and CEO
ConAgra Foods

ConAgra Foods commissioned this analysis of the most recent scientific evidence to help educate Americans about the extent of child hunger and the impact that it has on the youth of our nation. ConAgra Foods has a strong history of corporate leadership in the fight to end child hunger in the United States, and in response to this hidden tragedy, we established our Feeding Children Better Foundation in 1999.

What began as a three-way partnership with the Center on Hunger and Poverty and America's Second Harvest to address child hunger has grown into a program that has seen remarkable accomplishments. As the national sponsor of the Kids Cafe program, we have worked to expand afterschool feeding programs by funding new Kids Cafes (kids-only afterschool meal programs) across the nation; increased the amount of food donated and transported to the hungry by providing trucks for food banks and food-rescue organizations; and heightened awareness by sponsoring and helping develop a poignant Ad Council campaign that inspires citizens to become involved in the fight to end child hunger in their own communities.

Above and beyond these tangible accomplishments, ConAgra Foods' employees and brands have breathed life into the program through multiple initiatives, volunteer hours and an overall commitment to help ensure that "no child grows up hungry." ConAgra Foods understands that child hunger is a hidden problem in the United States, and we are dedicated to working with partners such as the Center on Hunger and Poverty to generate public awareness and understanding of the issue.

With the release of this latest analysis of the scientific evidence, ConAgra Foods and the Center on Hunger and Poverty welcome citizens, organizations and corporations across the country to join us in the fight to end child hunger in the United States.

Introduction

Dr. J. Larry Brown, Executive Director
Center on Hunger and Poverty
Distinguished Scientist, Heller School for Social Policy and Management
Brandeis University

Recent research findings summarized in this document now provide our nation with a much clearer picture of the tremendous costs of food insecurity and hunger among our children. An emerging generation of scientific evidence demonstrates a direct deleterious link between inadequate food and a variety of poor developmental outcomes. The research shows that youngsters from food insecure and hungry homes have poorer overall health status: they are sick more often, much more likely to have ear infections, have higher rates of iron deficiency anemia, and are hospitalized more frequently. In short, going hungry makes kids sick. As a result, they miss more days of school and are less prepared to learn when they are able to attend, making the relationship between hunger, health and learning of far greater importance than we previously realized. Further exacerbating this interactive impairment of young bodies and minds are the emotional and behavioral impacts that accompany food insecurity and hunger. At-risk children are more likely to have poorer mental health, be withdrawn or socially disruptive, and suffer greater rates of behavioral disorders.

While the scientific literature in this field continues to grow, we have known for some time that inadequate nutritional intake, associated with incomes too low to maintain a healthy diet, exacts a serious toll. Even moderate nutritional vulnerability, the kind often seen among 13 million high-risk children in the U.S., can impede cognitive development and impair their capacities over a lifetime. For youngsters whose natural abilities and talents are diminished, the cost is obvious. But the cost also extends to our nation in terms of higher rates of school failure, poorer returns on our educational investments, and weakened workforce productivity when children reach the age of employment.

Like other nations, the United States can protect its children from hunger. We have federal programs in place that, if strengthened and fully utilized, could virtually end hunger. In preparing this analysis in partnership with ConAgra Foods, it is our desire to provide the latest scientific knowledge in this field, hopefully arming our citizens and policymakers with the capacity and desire to make America a land where no child goes hungry.

Although they live in a wealthy nation, 13 million children in America live in households with limited or uncertain access to sufficient food. The majority of these children are white and have at least one parent who is working; nearly half live in two-parent families. Food hardships are even more pronounced among certain groups of children: about 30% of black and Hispanic children, and over 40% of low-income children live in households that do not have access to nutritionally adequate diets for an active, healthy life. (15)

While food insecurity and hunger are closely connected to poverty, direct research evidence linking family food hardship to health, behavioral, and other outcomes in children is now emerging. This report highlights recent findings showing the adverse consequences of hunger and food insecurity for children. The findings are grouped into three broad areas: health consequences, psychosocial and behavioral impacts, and learning and academic outcomes. A section on the relationship between food insecurity and obesity is also included, since this is an issue receiving growing attention.

Health Consequences

There is strong evidence that children who live in households lacking access to sufficient food are more likely to be in poorer health than children from food-secure households. Furthermore, studies suggest that food-insufficient children are more susceptible to certain illnesses and infections, more frequently experience sore throats, colds, stomachaches, and headaches, and also are more likely to be hospitalized. Moreover, several studies of low-income households find that iron deficiency anemia is associated with hunger and food insecurity.

Health status

- Household food insufficiency was associated with poorer health status for children in two different national samples. (3, 6)
- At medical sites in 6 states, food-insecure children under age 3 were more than twice as likely to be reported in fair or poor health. (8)

Illness, infection, and iron deficiency

- In a national sample, food-insufficient pre-school and school-aged children had more frequent stomachaches and headaches; food-insufficient preschoolers also experienced more frequent colds. (3)
- In 9 states and the District of Columbia, low-income children under 12 from hungry families were more likely to have frequent colds, ear infections, and other health problems compared to children from non-hungry families. (20)

ADVERSE CONSEQUENCES OF HUNGER AND FOOD INSECURITY FOR CHILDREN

Health

- Poorer overall health status and compromised ability to resist illness
- Elevated occurrence of health problems such as stomachaches, headaches, colds, ear infections, and fatigue
- Greater incidence of hospitalizations

Psychosocial and Behavioral

- Higher levels of aggression, hyperactivity, and anxiety as well as passivity
- Difficulty getting along with other children
- Increased need for mental health services

Learning and Academic

- Impaired cognitive functioning and diminished capacity to learn
- Lower test scores and poorer overall school achievement
- Repeating a grade in school
- Increased school absences, tardiness, and school suspension

- Iron deficiency anemia was associated with household food insecurity in a sample of very young low-income children seen in a Boston pediatric emergency department. (19)
- In a multi-state study of low-income families, hungry children under 12 were twice as likely to be anemic than non-hungry children in low-income households. (20)

Hospitalizations and doctor visits

- Food-insecure children under age 3 visiting urban emergency rooms in 6 states were 33% more likely to have been hospitalized since birth compared to food-secure children. (8)
- In a multi-state study of low-income households with children under 12, hungry children were more likely than other children to make frequent doctor visits. (20)

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Psychosocial and Behavioral Impacts

Recent studies indicate that children in food-insecure and hungry households experience considerable psychological and emotional distress. Food hardship due to limited household resources is associated with greater numbers of behavior problems in children, including hyperactivity and aggression as well as withdrawn behaviors. Food-insecure children appear to have more difficulties getting along with their peers, increased odds of being suspended from school, and greater need for special counseling and education services.

Psychological, emotional, and behavioral problems

- In Philadelphia, Baltimore, and Pittsburgh, low-income children who were hungry and at-risk for hunger were more likely than other children to exhibit impaired psychosocial functioning, including higher levels of anxiety, irritability, hyperactivity, and aggressive and oppositional behaviors. (12, 14)
- Children under 12 in a multi-state study of low-income, hungry households were more likely to experience fatigue and irritability, and have difficulty concentrating compared to other children. (20)
- In a national sample, children from food-insecure households showed higher levels of aggressive and destructive behaviors as well as more withdrawn and distressed behavior compared to other children. (18)
- In a national study, food-insufficient teenagers were more likely to have a lot or some difficulty getting along with others and were more likely to report having no friends. In addition, family food insufficiency was associated with depressive disorders and suicidal behaviors for 15- and 16-year olds. (1, 2)

Need for mental health services and special education

- Food-insufficient teenagers from a national sample were more than twice as likely to have seen a psychologist. (2)
- In a study of low-income families from the Pittsburgh area, children who were hungry were more likely to be receiving special education services and to have a past or current history of mental health counseling compared to other children. (12)

Learning and Academic Outcomes

Previous research has established that recurrent or involuntary lack of food may result in malnutrition over time,

and that even mild-to-moderate malnutrition can be a developmental risk factor for children. (5, 17) In particular, undernutrition can limit a child's ability to grasp basic skills and diminish overall learning potential. (7)

Recent research has begun to investigate the relationship between self-reported household food hardships and outcomes related to cognitive achievement and school performance. Several studies indicate that children from food-insufficient households do not perform as well on certain academic achievement tests as do children from food-sufficient households. Furthermore, there is evidence that elementary school-aged children from food-insufficient families are more likely to have repeated a grade in school, and have higher rates of tardiness and absences from school, which in turn may affect their overall academic performance.

Test scores, school performance, and learning

- In 2 national studies, household food hardships were negatively related to certain test and achievement scores for elementary-school children. (2, 18)
- In another national study, kindergarteners from less food-secure households scored lower on math tests taken at the beginning of the school year. They also learned less over the school year when they came from "marginally food-secure" homes, with learning measured as the gain in math score from the fall to the spring. (21)

Other factors affecting school achievement

- Elementary-school children from food-insufficient families were more likely to have repeated a grade in school in both a national sample of elementary-school children and a study of low-income families from the Pittsburgh area. (2, 12)
- Hungry and at-risk for hunger children from 4 inner-city schools in Philadelphia and Baltimore were absent from school more days than other children and also had higher rates of tardiness. A similar finding with respect to missing school was found in a multi-state survey of low-income households. (13, 20)
- Relative to other teenagers, food-insufficient teenagers were almost twice as likely to be suspended from school, according to a national study. (2)

Overweight and Obesity

In recent years, obesity and overweight have emerged as major public health problems in the United States. At the same time, the notion that household food insecurity may sometimes have an unexpected or paradoxical association

with overweight status has received increasing attention.

In general, hypotheses and proposed mechanisms for this association are more developed than the actual evidence and the research is at an early stage, particularly for children. One hypothesis is that obesity may be an adaptive response to episodic food insufficiency that results in overeating when food supplies are more abundant, followed by a period of involuntary food restriction when food supplies are limited. It has also been suggested that obesity may result from the consumption of low-cost, high fat foods to prevent hunger when households lack the money needed to buy nutritious food. (10, 16)

Several researchers have investigated whether, for children, there are differences in overweight by family income. To date, the evidence on this question is at best inconclusive. (see 4, 6, 9) A related but different question is whether obesity and food insecurity can be present in the same household. Early findings on this issue for children are also inconclusive:

- No consistent patterns among low-income children were found between overweight and food insufficiency status in a national study. Only non-Hispanic white 8- to 16-year-old food-insufficient girls were more likely to be overweight than other girls. In addition, food-insufficient 2- to 7-year-old girls were less likely to be overweight than food-sufficient girls, regardless of race and ethnicity. (4)
- In another national study, a positive but insignificant association was found between increasing food insecurity and the percentage of kindergartners categorized as overweight and obese. (21)

As stressed, investigations of the possible linkage for children between food insecurity/hunger and overweight are just beginning to occur. While no strong trends are apparent yet in this research, taken together these investigations suggest the importance of distinguishing between different age and race/ethnicity groupings and also the relative sensitivity of different measures of food deprivation to anthropometric measurement, such as body mass index (BMI) and weight-for-height.

Conclusions

The research findings highlighted in this report provide considerable evidence of the harmful consequences of food hardships for American children. They demonstrate that household hunger and food insecurity are linked to serious health, psychosocial, and academic problems for children that can, individually or interactively, impede normal growth and development. Most of these studies show adverse

consequences of hunger and food insecurity for children *over and above* the effects of living in poverty or being low-income.

Emerging research on the effects of food insecurity on child health, academic achievement, psychological health, and behavior demonstrates that household food security is an issue that extends beyond the boundaries of nutrition and into the realms of education, public health, and medicine. Given the preponderance of evidence that hunger and food insecurity are serious risk factors in child development, efforts are needed to increase the food security of American families and their children, whether by expanding nutrition assistance programs or through programs and policies that enable parents to provide adequately for the basic needs of their families.

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About the Center

The **Center on Hunger and Poverty** promotes policies that improve the lives and developmental capacities of low-income children and families in the nation. Established in 1990, the Center conducts applied research and policy analysis, disseminates analytic information on poverty and hunger, carries out public education initiatives, and provides assistance to policy makers and organizations across the country on poverty- and hunger-related issues.

The Center on Hunger and Poverty is part of the Heller School for Social Policy and Management at Brandeis University. The Center's programs are carried out through the Asset Development Institute and the Food Security Institute and through a series of special projects.

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